

## MEMO

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To: Mike Lake

Via: Tom Weeks

From: Dick Brightman

### **Cumulative Health Risk from Otay Mesa Turbine Projects**

The combined health risks from simultaneous operation of the Otay Mesa Generating Plant and the currently proposed peaking power plants to be located on or near Otay Mesa were estimated using a combined dispersion and risk analysis. The peaking power projects were the PG&E Dispersed Generation and RAMCO projects in Chula Vista, the Larkspur project on Otay Mesa, and the CalPeak project on Otay Mesa. Source strengths (sum of toxic emissions times toxicity for all toxic air contaminants emitted) from the individual projects were combined in a single air dispersion calculation with all sources included. Emissions were based on all turbines running at peak load on natural gas utilizing SCR controls with 10% ammonia slip. In addition, the Larkspur project was evaluated using distillate fuel at peak load for 680 hours per year and natural gas for the balance of the year.

For acute health risk, the calculated combined maximum health hazard index for all sources burning natural gas was 0.77, located in unpopulated elevated terrain 1 mile to the northeast of the Otay Mesa Generating Plant site. The acute health hazard index due to the Otay Plant alone was 0.76. Because the acute source strength for Larkspur when burning distillate is less than for natural gas operation, the worst case would occur when Larkspur was using only natural gas. The District's regulatory level of concern for acute health effects is a health hazard index of 1 for individual projects.

For chronic non-cancer health risk, the calculated combined maximum health hazard index for all sources was 0.148, located in unpopulated elevated terrain 1 mile to the northeast of the Otay Mesa Generating Plant site. The non-cancer chronic health hazard index due to the Otay Plant alone was 0.141. Because the acute source strength for Larkspur when burning distillate is less than for natural gas operation, the combined non-cancer chronic hazard index would be slightly less for this case. The District's regulatory level of concern for non-cancer chronic health effects is a health hazard index of 1 for individual projects.

For cancer health risk, the calculated combined maximum lifetime for all sources was 1.16, located in unpopulated elevated terrain 1 mile to the northeast of the Otay Mesa Generating Plant site. The estimated cancer risk due to the Otay Plant alone was 0.92. Because the cancer source strength for Larkspur when burning distillate is 6.4 % higher than when burning natural gas, and since the peaking turbines contribute at most 21 % of

the cumulative risk, calculations of combined risk for the scenario with Larkspur burning distillate for 680 hours per year result in a combined cancer risk that is at most 1.18 per million. The District's regulatory level of concern for cancer is a maximum lifetime cancer risk of 1 per million for individual projects or 10 per million for an individual project with TBACT controls installed.

# Otay Mesa Cumulative Cancer Risk from Otay and Peaking Power Plants

